

10/520308

OPTICAL ENCODER

This is a continuous application of a 371 of PCT/IB03/03039 filed on July 01, 2003 which claims priority from Germany Application 102 30 972.8 filed on July 10, 2002.

The invention relates to an apparatus, notably an X-ray apparatus, in which positions of movable components of the apparatus can be determined.

5 The document DE2831058 describes an X-ray examination apparatus in which a movably arranged component of the apparatus is connected, via a rope, to a potentiometer which is provided on another component of the apparatus. When the component of the apparatus is moved, the potentiometer is adjusted in conformity with the motion, so that the position of the component of the apparatus can be determined on the basis of the electrical
10 signals present across the potentiometer. However, because of the very intricate construction of the potentiometer, a system of this kind is very expensive. Moreover, the individual components are subject to a given degree of wear due to the mechanical adjustment of the potentiometer.

15 It is an object of the present invention to provide an apparatus, notably an X-ray apparatus, which comprises improved means for determining the position of components of the apparatus.

 This object is achieved by means of an apparatus which comprises two
20 components which are displaceable relative to one another, a position visualization unit which is provided on one component of the apparatus, or on a part which is connected thereto, an image acquisition unit which is provided on the other component of the apparatus, or on a part which is connected thereto, in order to acquire images of a segment of the position visualization unit which changes due to a relative motion between the components of
25 the apparatus, and an evaluation unit for extracting position information from the images.

 One component of the apparatus is provided with a position visualization unit whereby the position of this component of the apparatus can be determined relative to the other component of the apparatus.